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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/650,051

08/26/2003

Stephan Limper

HK-769

7384

7590

12/05/2005

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EXAMINER

VALONE, THOMAS F

ART UNIT

PAPER NUMBER

2858

DATE MAILED: 12/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/650,051

Applicant(s)

LIMPER ET AL.

Examiner

Thomas F. Valone

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16, 18-20 is/are rejected.
- 7) ☒ Claim(s) 4, 12 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/26/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because the horizontal line separating the cable plug 36 and cable 38 in Figure 3B appears to be superimposed upon the line framing the sensor carrier 30. Moving the line up or down slightly will visually separate the two parts. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claim 4 is objected to because of the following informalities: a repeated "and" appears in line 6 when only one is normally needed at the end of a list of items. The

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phrase "and a control and" should properly read, "a control and." Appropriate correction is required.

3. Claim 12 is objected to because of the following informalities: the word "connected" in line 6 should be replaced with the term "connecting" to imply an active voice and present tense to the claimed method. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 12-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Margolin (#4,230,938). Margolin teaches the use of a sensor apparatus with a sensor carrier, electronics, and electrodes (41,12 in Fig. 1) resting on the surface of a flat object (54 in Fig. 1 and respective portions of the specification) for conducting a measuring current through the surface of the flat object (sensing the condition of a recording medium in col. 4, lines 4-6), for the purpose of detecting a material of a surface which read on claims 1 and 12. Furthermore, Margolin also includes a measurement of resistance and conductivity (col. 4, line 53), thus anticipating claims 2 and 14. As to claim 13, Margolin teaches the application of a high frequency voltage to the sensor electrodes (radio frequency range in col. 2, line 67 – col. 3, line 2). Regarding claim 15, Margolin explicitly includes a voltage measurement for the read mode (col. 3, line 3) for the same purpose as the instant invention. It is also well known in electrical circuit

design that conducting a measuring current is inherent to a measurement of resistance and also, every current measurement necessitates a voltage measurement across a load resistor.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 4, 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Margolin (4,230,938) in view of Nakamura (5,499,807). The teachings of Margolin are reviewed above.

Referring to claims 3 and 4, Margolin includes an analog-digital converter (line 18, Abstract) and a controllable frequency generator (col. 3, line 1) connected to sensor electrodes (41,12 in Fig. 1) and where "the read voltage may be AC or DC" (col. 2, line 67 and col. 4, line 5), which also implies the presence of a rectifier to create DC from an AC power supply (16, 18 in Fig. 1). Margolin does not explicitly show a claimed amplifier or a connected comparator but these are an implied part of his evaluation unit (66 in Fig. 1 and microprocessor in col. 4, line 62) and its data analysis microprocessor software programming for data acquisition.

Nakamura teaches sensor electronics (detector 73 in Fig. 12), including an empty sensor 29 (col. 5, line 47), a resist sensor 36 (col. 6, line 2), an original size sensor (col. 6, line 5), and a paper discharge sensor 46 (col. 6, line 33). Nakamura includes the use

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of an amplifier (OP, Fig. 12) in sensor detection connected to a control and evaluation unit (CPU-61, Fig. 7) which is connected to an analog-digital converter (ADC-74, Fig. 36) and connected to a comparator (202, Fig. 37). The connections are indicated by lines or arrows between components in Figures 7, 12, 15 and 37.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included sensor electronics such as a hardware amplifier, a control and evaluation unit, an analog-digital converter, and a comparator as disclosed by Nakamura connected together with a sensor carrier of Margolin for the purpose of amplifying a signal and making it easier to detect and compare for better accuracy.

Regarding claims 5 and 9, Margolin's teachings are summarized above. Margolin fails to teach the detection of "no paper" condition. Nakamura includes a "no paper" detection (Fig. 13A and col. 9, line 62), which is a short-circuit detector (empty sensor 29 which serves as an original sensor in col. 5, line 47) connected to the sensor electrodes that normally measure resistance change, from a baseline no paper, short-circuit condition (col. 9, lines 1-5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the "no paper" detection of Nakamura to the material detection of Margolin so that an erroneous signal would not be generated when nothing is present between the sensing electrodes.

8. Claims 6, 10, 11, 13, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Margolin in view of Ganton (6,130,702). The teachings of Margolin are reviewed above. Margolin includes the detection of the exposure layer (abstract, line 2-3) but does not include interlayers in his invention. Ganton teaches the use of

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interlayers of paper between printing plates as well as sensing the difference (col. 2, line 15-30), thus reading on claims 10, 11, 18, 19 and 20.

Regarding claim 6, detecting 'no object' would be the largest magnitude measurement (and the easiest to discern as a baseline comparison), involving a grounded connection between the contact (3, Fig. 1) and the drum (5, Fig. 1). The rest of the objects (paper, metal, exposure layer) are included in the teachings of Margolin. It is also well known in electrical theory of operational amplifiers that only current is measured through the inverting or non-inverting inputs, as is the case with Ganton, though it may be small variations of current from a contact.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the sensor apparatus of Margolin for the purpose of detecting interlayers of paper between printing plates, as well as the difference between paper, an exposure layer of a printing plate, metal and "no object" as taught by Ganton.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Margolin.

The teachings of Margolin have been discussed above.

Margolin does not explicitly state the procedure of varying the frequency for measurement using a controllable frequency generator. However, Margolin indicates that the AC power supply can operate "up to radio frequency range" (col. 3, line 1) and that the read voltage may be AC or DC (col. 4, line 5). This implies that Margolin obviously has the capability of performing the function of varying the frequency using a

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controllable frequency generator (oscillators 16 and 18 in Fig. 1) and carrying out a plurality of measurements at different frequencies.

Since no evaluation step is indicated in the claim that would purposefully compare the plurality of measured voltages to those stored for various materials, as the disclosure (p. 17, lines 15-25) indicates is an essential part of the further embodiment involving a controllable frequency generator, it appears as is best understood, that normal experimentation may be implied by the claim language.

Since the measurement procedure of Margolin obviously includes varying the operating frequency, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to have varied the operating frequency of Margolin while taking a plurality of measurements at different frequencies in order that the sensor response or voltage measurements would also be significantly different due to normal impedance changes with frequency, skin depth changes with frequency, or even variable frequency interference effects.

10. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Margolin in view of Tanno (6,511,172). The teachings of Margolin are reviewed above. Margolin also includes a loading device (col. 4, lines 42-45) which is integrated into the sensor apparatus but does not teach the use of it for printing plates, nor the use of suction elements for gripping printing plates. Tanno, from the same field of art, teaches the use of a loading device for printing plates further comprising suction elements for gripping the plates (abstract, lines 3-6 and col. 7, lines 18-22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the



loading device of Margolin include a suction element for gripping the printing plates, integrated into the sensor apparatus, for the benefit of lifting and loading the printing plates while detecting the material of its surface.

***Allowable Subject Matter***

11. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, along with the omitted intervening step of "converting the measuring current into a measuring voltage."

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Quon discloses a variable frequency impedance measuring device. Yamada et al. teach the use of a plurality of current measurements at different frequencies.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas F. Valone whose telephone number is 571-272-8896. The examiner can normally be reached 9 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on 571-272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thomas Valone

A.U. 2858



DIANE I. LEE  
PRIMARY EXAMINER